

## **The Impact of Early Head Start on Children's Oral Health**

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### **Abstract**

**Background.** Early Head Start (EHS) is a publicly-funded comprehensive education program for low-income children under three years-old and their families. It is known to improve physical, cognitive and developmental child outcomes over the life course. While EHS impacts general health outcomes, little is known about its effect on oral health. This study assesses the effects of EHS on dental use and oral health-related quality of life (OHRQoL); as well as how the effect of EHS on dental use is modified by parents' health literacy.

**Methods.** This study examines oral health outcomes in children enrolled in North Carolina EHS programs where staff participated in an educational intervention known as Zero Out Early Childhood Caries (ZOE) and compares these results to Medicaid-matched controls. Parent interviews were conducted at baseline and 24-month follow-up for 1,178 parent-child dyads. Propensity score analysis was used to control for selection bias between the EHS and the control group. Logistic regression, marginalized zero-inflated negative binomial and marginalized semicontinuous two-part modeling with direct adjustment for propensity scores and random effects were used to examine the association between EHS and dental outcomes.

**Results.** EHS children had increased odds of having any dental visit (aOR=2.5; 95% CI=1.74-3.48) and any preventive dental visits (aOR=2.6; 95% CI=1.84-3.63) compared to non-EHS children. Children in EHS had 1.3 times (95% CI=1.17-1.55) the adjusted mean number of dental visits compared to the children not in EHS. EHS families had a lower odds ratio of having any negative impacts to OHRQoL compared to non-EHS children (aOR=0.65; 95% CI=0.48, 0.87). In the adjusted logit models on the effect of EHS on having any dental visits, the interaction effect between EHS and parent's health literacy was not significant ( $P>0.05$ ).

**Conclusions.** This study is the first to demonstrate that EHS provides services that increase child dental use and improve OHRQoL for disadvantaged young children and their families. Moreover, our findings provide evidence that EHS results in similar improvements in dental use regardless of parents' health literacy levels. These results document the effectiveness of comprehensive early education programs in improving dental use and quality of life for low-resource, low-literacy families.

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